IN THE CLAIMS

1. (Previously Presented) A method of processing audio signals, comprising:

inhibiting at least one feedback component of an input audio signal by adjusting a feedback-inhibiting filter using a narrowband subaudible probe signal.

2. (Original) A method of processing at least one audio signal, comprising:

filtering a processed signal by a notch filter to form a filtered signal; and

sending a subaudible narrowband signal having a first bandwidth into the filtered signal to form a probe signal to probe a feedback path having a second bandwidth.

3. (Original) The method of claim 2, further comprising:

comparing the probe signal to an input signal; and

adjusting selectively an inhibiting filter so as to inhibit at least one audio artifact associated with the feedback path.

4. (Previously Presented) The method of claim 3, further comprising:

turning off selectively the operation of the notch filter when the inhibiting filter is adjusted.

5. (Original) The method of claim 2, wherein sending the subaudible narrowband signal comprises sending the subaudible narrowband signal having a level, wherein the level of the subaudible narrowband signal is determined using an audibility model.

6. (Previously Presented) The method of claim 5, wherein sending the subaudible narrowband signal comprises sending the subaudible narrowband signal at a level determined by an audibility model, wherein the audibility model has a criterion level, and wherein the level of the subaudible narrowband signal is adjusted so as to be at the criterion level of the audibility model.

7. (Previously Presented) The method of claim 5, wherein sending the subaudible narrowband signal comprises sending the subaudible narrowband signal at a level determined by an audibility model, wherein the audibility model has a criterion level, and wherein the level of the subaudible narrowband signal is adjusted so as to be below the criterion level of the audibility model.

8. (Previously Presented) A system for enhancing audio signals, the system comprising:

at least one detector to detect undesired feedback in an input signal;

at least one notch filter to filter a processed signal, wherein the at least one notch filter provides a filtered signal and the processed signal is provided by processing the input signal; and

at least one probe generator to generate a probe signal, the probe signal and the filtered signal used to probe a feedback path with a narrowband subaudible audio probe signal.

9. (Original) The system of claim 8, wherein the at least one detector determines when the feedback path will be probed.

10. (Original) The system of claim 8, wherein the at least one detector determines a range of frequencies at which the feedback path will be probed.

11. (Original) The system of claim 8, wherein the at least one detector provides a feedback parameter, and wherein the at least one notch filter is receptive to the feedback parameter from the at least one detector.

12. (Original) The system of claim 8, wherein the at least one detector provides a plurality of feedback parameters, and wherein the at least one notch filter is receptive to the plurality of feedback parameters from the at least one detector.

13. (Original) The system of claim 8, wherein the at least one notch filter has a first bandwidth, wherein the undesired feedback has a second bandwidth, and wherein the at least one notch filter

is configured so as to center the first bandwidth of the at least one notch filter on the second bandwidth of the undesired feedback.

14. (Original) The system of claim 8, wherein the at least one probe generator has a first bandwidth, wherein the feedback path has a second bandwidth, and wherein the at least one probe generator is configured so as to center the first bandwidth of the at least one probe generator on the second bandwidth of the feedback path.

15. (Original) The system of claim 8, wherein the at least one probe generator generates a plurality of signals that are combined to form a probe signal to probe a feedback path.

16. (Original) The system of claim 8, further comprising a combiner to provide a combined signal, wherein the combiner combines the filtered signal of the at least one notch filter and the probe signal of the at least one probe generator.

17. (Original) The system of claim 8, further comprising a signal processor to provide the processed signal.

18. (Original) The system of claim 17, wherein the signal processor includes a compressive amplifier.

19. (Previously Presented) The system of claim 8, further comprising a switch to provide an output signal, wherein the switch is receptive to the processed signal and a combined signal, wherein the combined signal includes a combination of the probe signal and the filtered signal.

20. (Original) The system of claim 8, further comprising a filter adjuster to adjust a filter by providing a set of filter coefficients.

21. (Previously Presented) The system of claim 20, wherein the filter adjuster is configured to compare the input signal and an output signal to determine amplitude and phase responses of

the feedback path, wherein the output signal includes a combination of the probe signal and the filtered signal.

22. (Previously Presented) The system of claim 20, further comprising an inhibiting filter receptive to the set of filter coefficients from the filter adjuster to inhibit at least one feedback component of the input signal.

23. (Original) The system of claim 22, wherein the inhibiting filter approximates the response of the feedback path to provide at least one feedback component signal, wherein the at least one feedback component signal is subtracted from the input signal.

24. (Previously Presented) A system for enhancing audio signals, the system comprising:

at least one detector to detect undesired feedback in an input signal;

at least one notch filter to filter a processed signal, wherein the at least one notch filter provides a filtered signal and the processed signal is provided by processing the input signal; and

at least one probe generator to generate a probe signal, the probe signal and the filtered signal used to probe a feedback path with a narrowband subaudible audio probe signal, wherein the system further includes an inhibiting filter receptive to a set of discrete-Fourier-transformed filter coefficients from a filter adjuster to inhibit at least one feedback component of the input signal.

25. (Previously Presented) A system for enhancing audio signals, the system comprising:

at least one detector to detect undesired feedback in an input signal;

at least one notch filter to filter a processed signal, wherein the at least one notch filter provides a filtered signal and the processed signal is provided by processing the input signal; and

at least one probe generator to generate a probe signal, the probe signal and the filtered signal used to probe a feedback path with a narrowband subaudible audio probe signal, wherein the at least one probe generator is receptive to a feedback indicator parameter, the at least one probe generator comprising:

an amplitude indicator to indicate an amplitude level of the probe signal, wherein

the amplitude indicator provides an amplitude signal;

a frequency indicator to indicate a frequency of the probe signal, wherein the frequency indicator provides a frequency signal; and

a signal generator receptive to the amplitude signal and the frequency signal to generate the probe signal.

26. (Previously Presented) The system of claim 25, wherein the amplitude indicator comprises:

a bandpass filter receptive to the processed signal to provide a filtered bandpass signal;

a full-wave rectifier receptive to the filtered bandpass signal to provide a rectified signal; and

a multiplier receptive to the rectified signal and an empirical constant to provide the amplitude signal.

27. (Previously Presented) The system of claim 25, wherein the frequency indicator comprises:

a first divider to divide the feedback indicator parameter by two to provided a first divided signal;

an arccosine function to take the arccosine of the first divided signal to provide an acos signal;

a multiplier receptive to the acos signal and a sampling rate of a system the at least one probe generator is probing, wherein the multiplier provides a multiplied signal; and

a second divider to divide the multiplied signal by 2π, wherein the second divider provides a frequency signal.

28. (Previously Presented) The system of claim 25, wherein the signal generator is a sinusoidal generator.

29. (Previously Presented) The system of claim 25, wherein the signal generator is a

narrowband noise generator.

30. (Previously Presented) The system of claim 26, wherein the bandpass filter is about 150 Hertz wide.

31. (Previously Presented) The system of claim 26, wherein the filtered bandpass signal of the bandpass filter has a level, and wherein the amplitude signal is about 0 to about –3 dB relative to the level of the filtered bandpass signal of the bandpass filter.

32. (Previously Presented) The system of claim 26, wherein the empirical constant is about 0.71 to about 1.0.

33. (Previously Presented) The system of claim 26, wherein the probe signal has an amplitude level, and wherein the bandpass filter is selected with a predetermined response to attenuate the amplitude level of the probe signal so as to inhibit undesired feedback that is initiated by the probe signal.

34. (Previously Presented) The system of claim 25, wherein the frequency signal is a constant value.

35. (Previously Presented) The system of claim 26, the processed signal includes an environmental context of a listener.

36. (Previously Presented) A method of processing audio signals, comprising:

inhibiting at least one feedback component of an input audio signal by adjusting a feedback-inhibiting filter using a narrowband subaudible probe signal, wherein the method further includes generating a probe signal to provide the narrowband subaudible probe signal, generating the probe signal including:

generating an amplitude signal that is indicative of an amplitude level of the probe signal;

generating a frequency signal that is indicative of a frequency of the probe signal; and

generating a sinusoidal signal that is based on the amplitude signal and the frequency signal.

37. (Previously Presented) The method of claim 36, wherein generating an amplitude signal comprises:

filtering a processed signal with a bandpass filter to provide a filtered signal, the processed signal provided by processing the input audio signal;

rectifying the filtered signal to provide a rectified signal; and

multiplying the rectified signal with an empirical constant to provide the amplitude signal.

38. (Previously Presented) The method of claim 36, wherein generating a frequency signal comprises:

dividing a feedback indicator parameter by two to provide a first divided signal;

taking an arccosine of the first divided signal to provide an acos signal;

multiplying the acos signal and a sampling rate of a system the narrowband subaudible probe signal is probing to provide a multiplied signal; and

dividing the multiplied signal by 2p to provide the frequency signal.

39. (Previously Presented) The method of claim 37, wherein generating the amplitude signal further comprises selectively delaying the processed signal to compensate for the delay in generating the probe signal so as to allow the use of a high amplitude level of the probe signal.

40. (Previously Presented) The system of claim 8, further including a filter adjuster to adjust an inhibiting filter to inhibit the undesired feedback by providing a set of filter coefficients, the filter adjuster comprising:

a modeler receptive to a feedback indicator parameter, the input signal, and an output signal to model at least one response of the feedback path when the feedback path is probed with

the narrowband subaudible audio probe signal at a predetermined frequency, wherein the modeler provides at least one sample that is representative of the at least one response of the feedback path.

41. (Previously Presented) A system for enhancing audio signals, the system comprising:

at least one detector to detect undesired feedback in an input signal;

at least one notch filter to filter a processed signal, wherein the at least one notch filter provides a filtered signal and the processed signal is provided by processing the input signal; and

at least one probe generator to generate a probe signal, the probe signal and the filtered signal used to probe a feedback path with a narrowband subaudible audio probe signal, further including a filter adjuster to adjust an inhibiting filter to inhibit the undesired feedback by providing a set of filter coefficients, the filter adjuster comprising:

a modeler receptive to a feedback indicator parameter, the input signal, and an output signal to model at least one response of the feedback path when the feedback path is probed with the narrowband subaudible audio probe signal at a predetermined frequency, wherein the modeler provides at least one sample that is representative of the at least one response of the feedback path, wherein the modeler comprises:

a first Goertzel transformer receptive to the feedback indicator parameter and the input signal to provide a first complex signal having a first phase and a first amplitude; and

a second Goertzel transformer receptive to the feedback indicator parameter and the output signal to provide a second complex signal having a second phase and a second amplitude.

42. (Previously Presented) The system of claim 41, wherein the modeler further comprises:

a combiner to subtract the first phase and the second phase to provide a difference signal;

a divider to divide the first amplitude and the second amplitude to provide a ratio signal.

43. (Previously Presented) The system of claim 42, wherein the difference signal and the ratio signal form the at least one sample.

44. (Previously Presented) The system of claim 43, wherein the at least one sample is averaged.

45. (Previously Presented) A system for enhancing audio signals, the system comprising:

at least one detector to detect undesired feedback in an input signal;

at least one notch filter to filter a processed signal, wherein the at least one notch filter provides a filtered signal and the processed signal is provided by processing the input signal; and

at least one probe generator to generate a probe signal, the probe signal and the filtered signal used to probe a feedback path with a narrowband subaudible audio probe signal, further including a filter adjuster to adjust an inhibiting filter to inhibit the undesired feedback by providing a set of filter coefficients, the filter adjuster comprising:

a modeler receptive to a feedback indicator parameter, the input signal, and an output signal to model at least one response of the feedback path when the feedback path is probed with the narrowband subaudible audio probe signal at a predetermined frequency, wherein the modeler provides at least one sample that is representative of the at least one response of the feedback path, further comprising a discrete-Fourier-transformer to transform the at least one sample to obtain at least one filter coefficient.

46. (Previously Presented) The method of claim 1, wherein the method further includes adjusting the feed-back inhibiting filter by providing a set of filter coefficients, the method further comprising:

modeling at least one response of a feedback path to provide at least one sample that is indicative of the at least one response of the feedback path; and

transforming selectively the at least one sample by using a discrete-Fourier-transform to obtain at least one filter coefficient.

47. (Previously Presented) A method of processing audio signals, comprising:

inhibiting at least one feedback component of an input audio signal by adjusting a feedback-inhibiting filter using a narrowband subaudible probe signal, wherein the method further includes adjusting the feed-back inhibiting filter by providing a set of filter coefficients,

the method further comprising:

modeling at least one response of a feedback path to provide at least one sample that is indicative of the at least one response of the feedback path; and

transforming selectively the at least one sample by using a discrete-Fourier-transform to obtain at least one filter coefficient, wherein modeling further comprises:

transforming a feedback indicator parameter and the input signal to provide a first complex signal having a first phase and a first amplitude; and

transforming the feedback indicator parameter and an output signal to provide a second complex signal having a second phase and second amplitude.

48. (Original) The method of claim 47, wherein modeling further comprises:
subtracting the first and the second phase to provide a difference signal; and
dividing the first amplitude and the second amplitude to provide a ratio signal.

49. (Original) The method of claim 48, wherein modeling further comprises forming the at least one sample from the difference signal and the ratio signal.

50. (Original) The method of claim 49, wherein modeling further comprises averaging the at least one sample.